

(6 pages)

Reg. No. :

Code No. : 10350 E Sub. Code : AECA 54

B.C.A.(CBCS) DEGREE EXAMINATION, APRIL 2023

Fifth Semester

Computer Application—Major Elective

MULTIMEDIA

(For those who joined in July 2020 only)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

- _____ are linear presentation using text, graphics and pictures.
(a) Slide presentation
(b) Multimedia presentation
(c) Interactive multimedia presentation
(d) Templates

- Which of the following is not a Draw tool.
(a) Circle (b) Curve
(c) Polygon (d) Move
- _____ refers to the use of variety of media to communication messages
(a) arranger (b) shaper
(c) creator (d) sorter
- The slide_____ controls text characteristics background color and special effects, such as shadowing and bullet style
(a) presentation (b) master
(c) show (d) sorter
- _____ consists of collections of drawings available as black and white or 4 bits images.
(a) photo (b) clip art
(c) color graphics (d) None of the above
- _____ is the special effect used to introduce each slide in a slide presentation.
(a) Animation (b) Bulleting
(c) Transition (d) Mapping

7. _____ tool to select a selection of an image and discard the rest.

- (a) cut (b) crop
(c) discard (d) None of the above

8. Slide and title masters contain _____ that reserve spaces for text and footers such as date, time and slide number.

- (a) reservations (b) placeholders
(c) spaces (d) documents

9. _____ performs a visual effect on the stage, such as fade in or fade out of a sprite.

- (a) transition (b) tempo
(c) script (d) menus

10. Sun audio is a _____ bit compressed audio format

- (a) 4 bit (b) 8 bit
(c) 16 bit (d) 32 bit

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words

11. (a) What is multimedia? Explain about desktop.

Or

(b) Define the target audience and jobs in multimedia development industry?

12. (a) Discuss about the psychology of learning to interface design.

Or

(b) Illustrate about outlining and logic flow chart.

13. (a) Discuss about the text formats.

Or

(b) Elucidate about character format.

14. (a) Explain about capturing and editing digital video.

Or

(b) Why sound is important in multimedia presentation? Discuss.

15. (a) Explain about score window.

Or

(b) Describe about creating case members using paint window.

PART C — (5 × 8 = 40 marks)

Answer all THREE questions, choosing either (a) or (b).

Each answer should not exceed 600 words

16. (a) Describe application design and production of multimedia development team.

Or

(b) Discuss about multimedia application goals and objectives.

17. (a) Explain about considering interface design.

Or

(b) How to plan the production of your application? Explain.

18. (a) Discuss about kinds of graphics in detail.

Or

(b) Describe about sources of graphics.

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19. (a) Discuss file formats and editing digital audio.

Or

(b) Elucidate about digitized video in detail.

20. (a) Elucidate about classification by metaphor.

Or

(b) Discuss about moving caste members into the score.

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Reg. No. :

Code No. : 10347 E Sub. Code : AMCA 53

B.C.A. (CBCS) DEGREE EXAMINATION, APRIL 2023

Fifth Semester

Computer Application-Core

RDBMS

(For those who joined in July 2020 only)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. _____ is used to create and manage "table spaces"
- (a) Instances manager
(b) Storage manager
(c) Security manager
(d) Warehouse manager

6. The _____ oracle object that is used for faster retrieval of rows from a table.
- (a) SYNONYMS
(b) INDEX
(c) SEQUENCE
(d) VIEWS
7. _____ is formed from group of procedures and functions.
- (a) Package (b) Trigger
(c) Named block (d) Procedure
8. In which structure, the instructions are performed in a linear order
- (a) Selection
(b) looping
(c) sequence
(d) All the above
9. In a _____ cursor the contents are known at compile time.
- (a) Implicit (b) Explicit
(c) Dynamic (d) Static

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2. The _____ constraint are known as entity integrity constraint.
- (a) FOREIGN KEY
(b) PRIMARY KEY
(c) UNIQUE
(d) NOT NULL
3. Which of the following symbol is used for substitution variable in a query?
- (a) \$ (b) #
(c) & (d) @
4. The _____ function converts a null value to an actual value supplied as an argument
- (a) EXTRACT (b) FLOOR
(c) CEIL (d) NVL
5. To avoid using lengthy table names over and over again in a query _____ is used
- (a) Concatenation
(b) Cartesian product
(c) Column Aliases
(d) Table Aliases

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10. _____ is a single-dimensional with bounded collection of elements.
- (a) Array (b) Varray
(c) Field (d) None of these

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words

11. (a) Give an account on introduction to Oracle 9i.
Or
(b) Describe in detail about Data Types with examples.
12. (a) Explain how restricting data with a WHERE clause.
Or
(b) Explain about the group functions with example.
13. (a) Explain various types of set operators with suitable example.
Or
(b) Describe how the transactions have been done in SQL statements.

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[P.T.O.]

14. (a) Describe about Bind variables and substitution variables with suitable examples.

Or

(b) Define SQL in PL/SQL and write an example for a select statement in PL/SQL.

15. (a) Give short note on the introduction to cursor variables and its types with example.

Or

(b) Explain how values are assigned to rows in PL/SQL tables.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words

16. (a) Explain about the Personal Database in detail.

Or

(b) Give brief note on altering an existing table.

17. (a) Write a short note on retrieving data from a table.

Or

(b) Describe about various built-in functions with example.

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18. (a) What is a sub query? Explain its types with example.

Or

(b) Define Views. Explain how to create, remove and alter views with examples.

19. (a) Explain the block structures of PL/SQL.

Or

(b) Give short note on data manipulation in PL/SQL.

20. (a) Describe about Explicit cursor attributes with examples.

Or

(b) Explain in detail about PL/SQL records.

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PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 600 words.

16. (a) Determine the decimal number represented by 101101.10101.

Or

- (b) Write down the basic theorem and properties of Boolean algebra.

17. (a) Discuss the symbol and truth table for an NOT Gate.

Or

- (b) Compare the four variable map and five variable map.

18. (a) Elaborate the implementation of NAND and NOR.

Or

- (b) Illustrate the 4 bit magnitude comparator with neat diagram.

19. (a) Examine the main purpose of sequential circuits.

Or

- (b) Outline the need of storage element flip-flops.

20. (a) Draw and explain the implementation of shift register.

Or

- (b) Compare the ripple counters and synchronous counters.

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Code No. : 10481 E Sub. Code : CACA 11

B.C.A. (CBCS) DEGREE EXAMINATION,
APRIL 2023

First Semester

Computer Application - Allied

DIGITAL DESIGN

(For those who joined in July 2021 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

- Hexadecimal number system has _____ symbols.
(a) 15 (b) 12
(c) 16 (d) 10
- Binary equivalent of decimal 8 is _____
(a) 111 (b) 1001
(c) 1000 (d) 10001
- The 2's complement of 10002 is _____
(a) 0111 (b) 0101
(c) 1000 (d) 0001

4. 8421 codes is also called as _____
 (a) Gray code (b) ASCII code
 (c) Excess 3 - code (d) BCD Code
5. _____ are used for converting one type of number system in to the other form
 (a) Decoder (b) logic gate
 (c) half adder (d) Full adder
6. Multiplexer means _____
 (a) One into many (b) many into one
 (c) many into many (d) Two into many
7. The output of a 2-input OR the gate is 0 only when it's _____
 (a) both inputs are 0
 (b) either input is 1
 (c) both inputs are 1
 (d) either input is 0
8. When an input electrical signal A= 10100 is applied to a NOT gate, it's output Signal is _____
 (a) 01011 (b) 10101
 (c) 10100 (d) 00101
9. In Boolean algebra $A + AB =$ _____
 (a) B (b) A
 (c) AB (d) A+B
10. General Purpose register built with _____
 (a) TTL (b) High Speed buffers
 (c) Logic gates (d) DGA

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).
 Each answer should not exceed 250 words

11. (a) Write a note on binary logic.
 Or
 (b) Convert the hexadecimal number E3FA to binary.
12. (a) What are called don't care conditions? Explain.
 Or
 (b) How many entries are there on a four-variable Karnaugh map? Explain.
13. (a) Explain the binary multiplier with neat diagram.
 Or
 (b) Write down the Exclusive OR function.
14. (a) Elaborate the analysis of clocked sequential circuits.
 Or
 (b) Describe the purpose of storage element latches.
15. (a) Summarize the concept of memory decoding.
 Or
 (b) Mention the functions of Random Access Memory.

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Code No. : 10482 E Sub. Code : CACA 21

B.C.A. (CBCS) DEGREE EXAMINATION, APRIL 2023.

Second Semester

Computer Applications — Allied

MATHEMATICAL FOUNDATION FOR COMPUTER SCIENCE

(For those who joined in July 2021 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. For any two sets A and B , $A - B =$ _____.

(a) $(A \cup B) - B$ (b) $(A \cup B) - A$

(c) $(A \cap B) - B$ (d) $(A \cap B) - A$

For any three sets A, B, C

$A \cup B = A \cup C$ and $A \cap B = A \cap C$ implies

(a) $A = B$ (b) $A = C$

(c) $B = C$ (d) $A = B = C$

3. Set of all equivalence classes given an equivalence relation is called _____.

- (a) Partition Set (b) Quotient Set
(c) Closure Set (d) Equivalent Set

4. The function $f: N \rightarrow N$, given by $f(x) = 2x$ is _____.

- (a) one-one but not onto
(b) one-one and onto
(c) neither one-one nor onto
(d) not one-one but onto

5. A compound statement formed by combining two statements using the words "if - then" is _____.

- (a) Tautology (b) Contradiction
(c) Conditional (d) Bi-conditional

6. Which of the following is correct?

- (a) $A \rightarrow (B \vee C) \Leftrightarrow (\neg A \wedge \neg B) \rightarrow C$
(b) $A \rightarrow (B \vee C) \Leftrightarrow (A \wedge \neg B) \rightarrow \neg C$
(c) $A \rightarrow (B \vee \neg C) \Leftrightarrow (A \wedge \neg B) \rightarrow C$
(d) $A \rightarrow (B \vee C) \Leftrightarrow (A \wedge \neg B) \rightarrow C$

7. Graph with only one vertex and no edges is called _____ graph.
- (a) Trivial (b) Pseudo
(c) Null (d) Isolated
8. Two vertices are _____ if they are end vertices of the same edge.
- (a) Disjoint (b) Adjacent
(c) Bipartite (d) Incident
- A connected undirected graph is Eulerian if every graph vertex has _____ degree.
- (a) Even (b) $n-1$
(c) Odd (d) n
9. The number of non-pendant vertices in a binary tree is _____.
- (a) $(n+1)/2$ (b) N
(c) $n/2$ (d) $(n-1)/2$

PART B — (5 × 5 = 25 marks)

Answer ALL questions by choosing (a) or (b).

Each answer should not exceed 250 words.

(a) Show that $A \cup (B \cap C) = (A \cup B) \cap C$.

Or

- (b) Let $S = \{a, b, c, d, e\}$. Find the equivalence relation induced by the partition $\{\{a, b\}, \{c\}, \{d, e\}\}$.

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12. (a) Give the types of functions.

Or

- (b) If $f: X \rightarrow Y$, $g: Y \rightarrow Z$ and $h: Z \rightarrow S$ are functions, then show that $h \circ (g \circ f) = (h \circ g) \circ f$.

13. (a) What is disjunction? Draw the truth table for disjunction.

Or

- (b) Construct the truth table for $(P \rightarrow Q) \vee (Q \rightarrow P)$.

14. (a) Prove that the number of vertices of odd degree in a graph G is always even.

Or

- (b) Write a note on bipartite graph.

15. (a) What are connected and disconnected graphs?

Or

- (b) Write a note on spanning trees.

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[P.T.O.]

PART C — (5 × 8 = 40 marks)

Answer ALL questions by choosing (a) or (b).

Each answer should not exceed 600 words.

16. (a) Out of 60 students in a class, 25 play Badminton, 20 play Tennis and 30 play Volley ball. 12 play Badminton and Tennis, 9 play Tennis and Volley ball, 13 play Volley ball and Badminton, 5 play all the three games. Find how many of them play (i) None of the game (ii) Only Volley Ball (iii) Only Badminton.

Or

- (b) Prove that $A\Delta(B\Delta C) = (A\Delta B)\Delta C$.

17. (a) Prove that the intersection of any two equivalence relations is an equivalent relation.

Or

- (b) If $f: X \rightarrow Y$ and $g: Y \rightarrow Z$ are bijections, then $(g \circ f)^{-1} = f^{-1} \circ g^{-1}$.

8. (a) Show that

$$P \rightarrow (Q \rightarrow R) \Leftrightarrow P \rightarrow (\bigwedge Q \vee R) \Leftrightarrow (P \wedge Q) \rightarrow R.$$

Or

- (b) Obtain the principal disjunctive and conjunctive normal form for $(P \wedge Q) \vee (\bigwedge P \wedge Q \wedge R)$.

19. (a) Draw Peterson (10, 15) graph.

Or

- (b) Briefly explain adjacency matrix of a graph.

20. (a) What is an Euler graph? Mention its properties.

Or

- (b) Draw a 5-level binary tree with 15 vertices.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Describe in details collision resolution.
Or
(b) Write about hashed list search with examples.
17. (a) Explain the circularly linked list.
Or
(b) Define double linked list. Discuss it.
18. (a) Define STACK. Discuss basic STACK operations.
Or
(b) Write an algorithm of ADD, DELETE from a linked STACK.
19. (a) Describe about the binary tree traversals.
Or
(b) Define binary search tree. Write binary search tree algorithm.
20. (a) Describe the operations on graph.
Or
(b) What are the external sorts? Discuss any one sort.

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B.C.A. (CBCS) DEGREE EXAMINATION, APRIL 2023.

Third Semester

Computer Application – Allied

DATA STRUCTURES

(For those who joined in July 2021 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

- Binary search requires an _____
(a) Sequential (b) Ordered list
(c) Hashed (d) None
- The address produced by the _____ is known as Home address.
(a) Collision
(b) Synonyms
(c) Hashing algorithm
(d) None



3. The most powerful variation of linked list is _____
 (a) multilinked list (b) circularly linked list
 (c) double linked list (d) single linked list
4. Push operation can be used to _____ an item.
 (a) delete (b) add
 (c) empty (d) None of these
5. A _____ is a FIFO structure.
 (a) STACK (b) Queue
 (c) Linked list (d) HEAP
6. A linear list is in which each element has
 (a) a general (b) a unique successor
 (c) a restricted (d) all of these
7. A leaf is a node with an _____
 (a) out degree of zero (b) in degree of one
 (c) out degree branch (d) in degree branch
8. The maximum degree of any vertex in a simple graph with n vertices is _____
 (a) n (b) $n - 1$
 (c) $n + 1$ (d) $2n - 1$
9. Sorting is useful for _____
 (a) report generation
 (b) responding queries
 (c) making searches easily
 (d) all of these

10. Each iteration of the quick sort selects an element known as _____
 (a) median (b) pivot
 (c) key (d) value

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).
 Each answer should not exceed 250 words.

11. (a) What do you mean by Pseudo Code?
 Or
 (b) Write about ADT. Give an example.
12. (a) Discuss the linear list operations.
 Or
 (b) How to add element in linked list?
13. (a) Write about queue operations.
 Or
 (b) Discuss about stack applications.
14. (a) Write about insertion into general trees.
 Or
 (b) Define Heap. Discuss about Heap structure.
15. (a) How quick sort algorithm implemented?
 Or
 (b) Explain the graph Storage Structure.



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Reg. No. :

Code No. : 10484 E Sub. Code : CACA 41

B.C.A. (CBCS) DEGREE EXAMINATION,
APRIL 2023

Fourth Semester

Computer Application – Allied

ACCOUNTING SOFTWARE – TALLY

(For those who joined in July 2021 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Which option is used to open company created in Tally
 - (a) Create Company
 - (b) Alter
 - (c) Select Company
 - (d) Shut Company

2. Which option from Company Info. Menu is selected to create a new company in Tally
 - (a) Company Create
 - (b) Create Company
 - (c) Create
 - (d) New Company
3. Which submenu is used to creating stock groups, stock items and Unit of measure in Tally?
 - (a) Account Info
 - (b) Inventory Info
 - (c) Accounting Vouchers
 - (d) Inventory Vouchers
4. A _____ is a book in which the business transaction are posted in the form double entry book-keeping system.
 - (a) Groups
 - (b) Orders
 - (c) Voucher
 - (d) Ledger
5. The _____ report keeps the record of the day to day business transactions of a company.
 - (a) Balance sheet
 - (b) Trail Balance
 - (c) Day Book
 - (d) All of the above



14. (a) How will you create a Single employee in tally?

Or

(b) How will you create, display and alter attendance?

15. (a) Describe Goods and Services Tax.

Or

(b) Write about advantages and disadvantages of VAT.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Discuss about components of the Tally.

Or

(b) Describe about single and multiple stock items.

17. (a) Explain about single and multiple group.

Or

(b) Describe about accounting vouchers in detail.

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18. (a) Describe about Balance sheet in detail.

Or

(b) Discuss about day book reports.

19. (a) Explain create, display and alter pay heads in detail.

Or

(b) Discuss about employee groups in detail.

20. (a) Explain Tax Deducted at source in Tally.

Or

(b) Discuss about tax collected at source.

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Reg. No. :

Code No. : 10475 E Sub. Code : CMCA 11

B.C.A. (CBCS) DEGREE EXAMINATION,
APRIL 2023

First Semester

Computer Application – Core

PROGRAMMING IN C

(For those who joined in July 2021 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Enum types are processed by _____
- (a) Compiler
 - (b) Preprocessor
 - (c) Linker
 - (d) Assembler

2. Which of the following statement is false?
- (a) Constant variables need not be defined as they are declared and can be defined later
 - (b) Global constant variables are initialized to zero
 - (c) Constant keyword is used to define constant values
 - (d) You cannot reassign a value to a constant variable
3. What is the default return-type of `getchar()`?
- (a) char
 - (b) int
 - (c) char *
 - (d) reading character doesn't require a return-type
4. `y = (x > 5 ? 3 : 4);`
- The above statement is a
- (a) Compilation operator
 - (b) Algebraic operator
 - (c) Binary operator
 - (d) None

5. Which of the following is the correct way to declare a multidimensional array in Java?
- (a) `int[] arr;` (b) `int arr[][];`
(c) `int[][]arr;` (d) `int[][][]arr;`
6. What will `strcmp()` function do?
- (a) compares the first n characters of the object
(b) compares the string
(c) undefined function
(d) copies the string
7. What are the types of functions in C Language?
- (a) Library Functions
(b) User Defined Functions
(c) Both Library and User Defined
(d) None of the above
8. Choose correct statements about C Language Pass By Value.
- (a) Pass By Value copies the variable value in one more memory location
(b) Pass By Value does not use Pointers
(c) Pass By Value protects your source or original variables from changes in outside functions or called functions
(d) All the above

9. How can you write `a[i][j][k][l]` in equivalent pointer expression?
- (a) `((***(a+i)+j)+k)+l`
(b) `((**(* (a+i)+j)+k)+l)`
(c) `(*(*(* (a+i)+j)+k)+l)`
(d) `*(*(*(* (a+i)+j)+k)+l)`
10. Address stored in the pointer variable is of type _____.
- (a) Integer (b) Float
(c) Array (d) Character

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Explain uses of variables in detail.
Or
(b) Discuss about evaluation of expressions.
12. (a) Write about while statement.
Or
(b) Illustrate on formatted output.



13. (a) Expound reading string from terminal with necessary theory.

Or

(b) Explain two dimensional arrays with suitable example.

14. (a) Discuss about recursion.

Or

(b) Explain user defined functions with necessary theory.

15. (a) Give a clear view on pointer expressions.

Or

(b) Discuss about pointer to pointer.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Explain briefly about operators.

Or

(b) Discuss about constants and its types.

17. (a) Explain IF statements in detail.

Or

(b) Write a C program to implement for loop.

18. (a) Give a clear view on arithmetic operations on characters.

Or

(b) Create a C program to implement an array.

19. (a) Explain arguments and its types in functions.

Or

(b) Discuss about nesting of functions.

20. (a) Write a C program to implement pointer.

Or

(b) Illustrate scale factors in pointers with necessary theory.



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Reg. No. :

Code No.: 10476 E Sub. Code: CMCA 21

B.C.A. (CBCS) DEGREE EXAMINATION, APRIL 2023.

Second Semester

Computer Applications – Core

OBJECT ORIENTED PROGRAMMING IN C++

(For those who joined in July 2021 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. The language that is specially designed to support OOP concepts is.
(a) Fortran (b) COBOL
(c) Pascal (d) C++
2. C++ is a superset of _____ language
(a) English (b) C
(c) Pascal (d) Java

3. Which of the following is an advantage of functions?
(a) unstructured programming
(b) Exception handling
(c) Bottom-up approach
(d) Reduces the size of a program
4. Which is a way to bind data and associated functions together?
(a) Method
(b) Class
(c) attribute
(d) binder
5. Which operator is used to allocate memory dynamically?
(a) alloc (b) mem
(c) new (d) malloc
6. Which of the following operator cannot be overloaded?
(a) ?: conditional
(b) [] subscript
(c) + plus
(d) – minus



7. A derived class with only one base class is called _____ inheritance

- (a) Hierarchal
- (b) Private
- (c) Single
- (d) public

8. If a class contains objects of other classes, then it is called _____

- (a) Container
- (b) Containership
- (c) Condenser
- (d) controller

9. Which of the following is a sequence of bytes?

- (a) Bridge
- (b) Container
- (c) stream
- (d) Interface

10. Which class supports functions for managing errors?

- (a) ftell
- (b) fail
- (c) ferror
- (d) ios

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Write notes on benefits of OOP.

Or

(b) Write a note on scope resolution operator.

12. (a) Illustrate call by reference in C++.

Or

(b) Write notes on array of objects.

13. (a) Write a note on copy constructors.

Or

(b) Give the rules for overloading operators.

14. (a) Write a note on making a private member inheritable.

Or

(b) Write a note on virtual base classes.



15. (a) List out C++ stream classes.

Or

(b) Discuss about file pointers and their manipulators.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Explain the basic concepts of OOP.

Or

(b) Write a C++ program to input your name and print a welcome message eg., Priya, Welcome to C++

17. (a) List any five math library functions and give their description.

Or

(b) Write a C++ program to illustrate object as function argument.

18. (a) Explain parameterized constructor.

Or

(b) Write a C++ program to overload + operator to string concatenation.

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19. (a) Explain hierarchical inheritance.

Or

(b) Explain hybrid inheritance.

20. (a) Explain unformatted I/O operations.

Or

(b) Explain opening and closing of a file.

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B.C.A. (CBCS) DEGREE EXAMINATION,
APRIL 2023

Third Semester

Computer Application — Core

JAVA PROGRAMMING

(For those who joined in July 2021 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Which makes Java code architecture neutral?
 - (a) JRE
 - (b) JDK
 - (c) JVM
 - (d) Java Bean

2. Which of the following is bitwise exclusive OR operator?
 - (a) -
 - (b) ^
 - (c) <<
 - (d) %
3. Which variable should be initialized when it is declared?
 - (a) static
 - (b) const
 - (c) final
 - (d) friend
4. Which keyword is used to access a member of the superclass?
 - (a) super
 - (b) extends
 - (c) inherit
 - (d) super(parameter list)
5. Which of the following is used to specify what a class must do?
 - (a) implements
 - (b) interface
 - (c) package
 - (d) Import

6. Which command is used to create a package?
 - (a) implements
 - (b) interface
 - (c) package
 - (d) import
7. Which class is used for accessing the attributes of a remote resource?
 - (a) Socket
 - (b) URLConnection
 - (c) ServerSocket
 - (d) Datagram
8. Which of the following is a required attribute of APPLET tag?
 - (a) code
 - (b) codebase
 - (c) align
 - (d) name
9. Which control is used to create a pop-up list of items?
 - (a) Label
 - (b) Check Box
 - (c) Choice
 - (d) Button
10. Which of the following is AWT passive control?
 - (a) Button
 - (b) Label
 - (c) Check box
 - (d) Scroll bar

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) List the data types In Java with examples.
Or
(b) Write a Java program to find the minimum of two numbers with conditional operator.
12. (a) Explain constructor overloading.
Or
(b) Give the use of final.
13. (a) Write a note on exception handling.
Or
(b) Give the use of is Alive() and join().
14. (a) Explain delegation event model.
Or
(b) Write a note on cookies.
15. (a) Write a note on AWT classes.
Or
(b) Implement flow layout.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Write a Java program to Input two numbers and display their sum.

Or

- (b) Classify the operators in Java and give description.

17. (a) Write a Java program to show the use of object as parameter.

Or

- (b) Explain method overriding.

18. (a) Briefly explain the importing of packages.

Or

- (b) Write a Java program to create multiple threads.

19. (a) Briefly explain HTTP URL Connection.

Or

- (b) Briefly explain Keyboard event handling.

20. (a) Write an applet to display a rectangle in RED color and fill it with Green color.

Or

- (b) Create a form with a label box, a text box and check box group and two buttons.
-

Reg. No. :

Code No. : 10478 E Sub. Code : CMCA 32

B.C.A. (CBCS) DEGREE EXAMINATION, APRIL 2023.

Third Semester

Computer Application – Core

FINANCIAL ACCOUNTING

(For those who joined in July 2021 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Business is distinct from the owner is called the concept of
 - (a) Business entity
 - (b) Going concern
 - (c) Cost
 - (d) Money measurement

2. The accounting equation is concerned with
- (a) Assets only
 - (b) Liabilities only
 - (c) Assets and Liabilities
 - (d) Assets and expenses
5. Cash account always shows
- (a) debit or credit balance
 - (b) credit balance
 - (c) debit balance
 - (d) none of these
4. Sale of goods on credit to Mr. Ram should be credited to
- (a) Goods a/c (b) Sales a/c
 - (c) Ram's a/c (d) Mrs. Ram's a/c
5. Trial balance is
- (a) a revenue statement
 - (b) statement of ledger balances
 - (c) ledger account
 - (d) income statement

6. Any difference in trial balance is normally transferred to
- (a) capital account
 - (b) nominal account
 - (c) suspense account
 - (d) revenue account
7. Balance sheet is prepared to know
- (a) financial position (b) profit or loss
 - (c) net profit (d) cost of a product
8. Goodwill is
- (a) a current asset
 - (b) an intangible asset
 - (c) a tangible asset
 - (d) a fictitious asset
9. Receipts and payments account is a
- (a) Real a/c (b) Nominal a/c
 - (c) Personal a/c (d) Revenue a/c
10. Subscription received in advance is
- (a) an asset (b) an income
 - (c) a liability (d) an expense

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Describe the objective of accounting.

Or

- (b) What are the characteristics of accounting concepts and convention?

12. (a) Distinguish between journal and ledger.

Or

- (b) Record the following transactions in the personal account of Shri Murugan:

2000	Details	Rs.
Apr. 1	Sold goods to Murugan	6,000
5	Cash received from Murugan and allowed him discount	5,800
18	Murugan purchased goods	8,000
30	Received cash from Murugan on account	4,500

13. (a) Categorize the various methods of preparing trial balance.

Or

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- (b) Prepare Trial balance from the following:

	Rs.		Rs.
Capital	9,000	Rent outstanding	1,000
Plant and Machinery	12,000	Opening stock	2,000
Purchases	8,000	Sales returns	4,000
Sales	12,000	Investments	14,000
Sundry Creditors	8,000	Debtors	12,000
Bank loan	22,000		

14. (a) Examine the advantages of trading account.

Or

- (b) Prepare Trading account of Narmadha for the year ending 31.12.2021 from the following information:

	Rs.
Opening Stock	80,000
Purchases	8,60,000
Freight Inward	52,000
Wages	24,000
Sales	14,40,000
Purchase returns	10,000
Sales returns	3,16,000
Closing stock	1,00,000
Import duty	30,000

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15. (a) Write a short note on non-trading organization.

Or

- (b) From the following information, find out the amount to be taken to income and expenditure account in the year ending 31.3.2021:

Particulars	As on 1.4.20 Rs.	As on 31.3.21 Rs.
Opening stock	1,600	800
Creditors for stationary	480	1,200
Amount paid to creditors for stationary	-	8,000

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Describe any five accounting terminology.

Or

- (b) Explain the various accounting concepts briefly.

Page 6 Code No. : 10478 E

17. (a) Discuss the accounting rules for debit and credit.

Or

- (b) Journalize the following transactions of M/s. Radha and Sons.

2021 Jan	M/s Radha and Sons	Rs.
1	Business started with Rs 2,50,000 and cash deposited with bank	1,50,000
3	Purchase Machinery on credit from Rangan	50,000
	Bought furniture from Ramesh for cash	25,000
12	Goods sold to Yasodha	22,500
15	Goods returned by Yasodha	2,500
18	Cash paid to Ramola	20,000
23	Cash withdrawn from bank	50,000
28	Paid advertisement expenses	12,500
31	Paid rent	2,500

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18. (a) Categorize the various errors disclosed by trial balance.

Or

- (b) David is not an expert in accounting. He prepared the following trial balance. You are required to correct it and prepare a corrected trial balance.

Particulars	Debit Rs.	Credit Rs.
Capital	-	15,560
Sales	-	27,560
Sales returns	-	980
Drawings	5,640	-
Sundry debtors	-	5,300
Freehold premises	7,410	-
Purchases	12,680	-
Returns outwards	2,640	-
Loan from Sharma	-	2,500
Sundry Creditors	5,280	-
Administrative expenses	7,840	-
Cash in hand	1,420	-
Bills payable	1,000	-
Wages	5,980	-

Particulars	Debit Rs.	Credit Rs.
Opening stock	-	2,640
Factory expenses	4,650	-
	<u>54,540</u>	<u>54,540</u>

19. (a) From the trial balance given below, prepare final accounts for the year ending on 31.3.2021.

	Rs.		Rs.
Opening stock	9,300	Bank interest	200
Repairs	310	Purchase returns	440
Machinery	12,670	Creditors	12,370
Furniture	1,330	Sales	20,560
Office expenses	750	Capital	24,500
Trade expenses	310	Loan	5,000
Land & Building	15,400		
Bank charges	50		
Purchases	15,450		
Sales returns	120		
Advertisements	500		
Cash in hand	160		
Cash at bank	5,870		

	Rs.		Rs.
Sundry expenses	150		
Insurance	500		
Travelling expenses	200		
	<u>63,070</u>		<u>63,070</u>

Additional Information:

- (i) Closing stock on 31.3.2021 Rs. 7,585
- (ii) Prepaid insurance Rs. 250
- (iii) Depreciation on Land and Building at 5% and Machinery at 10%.

Or

- (b) From the following particulars, prepare Trading and Profit and Loss a/c and Balance sheet :

	Rs.		Rs.
Capital	50,000	Returns in	1,000
Plant and Machinery	80,000	Returns out	750
Sales	1,77,000	Discount	400
Purchases	60,000	Salaries	7,500
Debtors	45,000	Wages	10,750
Creditors	25,000	Rent	12,000
Cash balance	6,900	Opening stock	29,200

Additional Information:

- (i) Closing stock Rs. 35,000.
- (ii) Depreciation on Plant and Machinery at 6%.
- (iii) Interest on Capital to be allowed at 5%.
- (iv) Outstanding Rent was Rs. 1,000.

20. (a) Analyse the various steps to prepare income and expenditure account.

Or

- (b) From the following particulars, prepare Income and Expenditure account of the Central Sports Society for the twelve month from April 2020 (date of inception) to March 31,2021.

Particulars	Received or Paid Rs.	Outstanding on March 31, 2021 Rs.
Subscription from members	4,600	-
Subscription from affiliated society	1,400	200
Life subscription	2,000	-
Gift Received	3,000	-
Interest received	160	-

Particulars	Received or Paid Rs.	Outstanding on March 31, 2021 Rs.
Committee Expenditure :		
Executive	1,500	200
Planning	1,440	640
Tournament	420	120
Printing, Postage and Stationery	1,140	160
Office Furniture	2,000	—
Investment purchased	3,000	—

Fourth Semester

Computer Application – Core

PYTHON PROGRAMMING

(For those who joined in July 2021 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

- 1. In which language Python is written?
 - (a) Java
 - (b) c#
 - (c) c++
 - (d) c
- 2. Which of the following is used in Python to create lists?
 - (a) ()
 - (b) []
 - (c) { }
 - (d) < >

- 3. Numpy arrays can be _____.
 - (a) indexed
 - (b) sliced
 - (c) iterated
 - (d) all the mentioned
- 4. Amongst which python library allows users to perform mathematical and logical operations on arrays
 - (a) SciPy
 - (b) TensorFlow
 - (c) piTorch
 - (d) NumPy
- 5. In Python, _____ keyword is used to define a function.
 - (a) module
 - (b) sub
 - (c) def
 - (d) (c) or (b)
- 6. What is the output of the following program?


```
z = lambda x : x * x
print(z(6))
```

 - (a) 6
 - (b) 36
 - (c) 0
 - (d) error
- 7. _____ is a data structure in which we store values as a pair of key and value.
 - (a) tuple
 - (b) dictionary
 - (c) list
 - (d) files

- 8. The process of pickling in Python includes:
 - (a) conversion of a list into a data table
 - (b) conversion of a byte stream into Python object hierarchy
 - (c) conversion of a Python object hierarchy into byte stream
 - (d) conversion of a data table into a list

- 9. What will be the output of the following Python code?

```
class test:
    def __init__(self, a = "Hello World"):
        self.a = a
    def display(self):
        print(self.a)
```

- ```
obj = test()
obj.display()
```
- (a) The program has an error because constructor can't have default arguments
  - (b) Nothing is displayed
  - (c) "Hello World" is displayed
  - (d) The program has an error display function doesn't have parameters

- 10. What is the use of duck typing?
  - (a) More restriction on the type values that can be passed to a given method
  - (b) No restriction on the type values that can be passed to a given method
  - (c) Less restriction on the type values that can be passed to a given method
  - (d) Makes the program code smaller

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b). Each answer should not exceed 250 words.

- 11. (a) Present any five comparisons between python and Java.

Or

- (b) Devise detailed notes on bitwise operators and membership operators in python with examples.

- 12. (a) Examine pass and assert statements in python with examples.

Or

- (b) Construct python program to check odd or even using command line arguments.

13. (a) What are lambda functions? Give syntax and examples.

Or

(b) How do you define a function in python? Present syntax and example for calling a function.

14. (a) Explain the use of loops with dictionaries in python.

Or

(b) How do you open and close files in python?

15. (a) Designate super() in Python. Give examples

Or

(b) Describe duck typing philosophy of python.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b)  
Each answer should not exceed 600 words.

16. (a) Formulate detailed notes on ranges and tuples in python with examples.

Or

(b) Propose concepts behind

(i) data types in python

(ii) memory management in python.

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17. (a) Generalize the following with examples

(i) creation of arrays

(ii) indexing and slicing arrays.

Or

(b) Describe the following in python with examples

(i) if ... elif statement

(ii) break and continue statements.

18. (a) Explain how to create and access lists with examples.

Or

(b) Describe recursive functions with a sample python program.

19. (a) Discuss creation and accessing of dictionaries with syntax and example.

Or

(b) Analyze the following

(i) seek() and tell()

(ii) pickle in python

20. (a) Illustrate implementation of inheritance in python.

Or

(b) Exemplify operator overloading in python.

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(6 Pages)

Reg. No. : .....

Code No. : 10485 E

Sub. Code : CSCA 31

B.C.A. (CBCS) DEGREE EXAMINATION, APRIL 2023.

Third Semester

Computer Application

Skill Based Subject — PROGRAMMING IN PHP AND  
MYSQL

(For those who joined in July 2021 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Variable name in PHP starts with \_\_\_\_\_
  - (a) !
  - (b) \$
  - (c) &
  - (d) #
  
2. How many types of loops are supported by PHP?
  - (a) 4
  - (b) 3
  - (c) 2
  - (d) 1

3. Which of the following can hold more than one value at a time?
- (a) integer (b) array  
(c) char (d) boolean
4. How is a function defined in PHP?
- (a) function (function body}  
(b) data type functionName (parameters)  
{function body}  
(c) functionName(parameters) {function body}  
(d) function functionName (parameters) {function  
body}
5. Which one of the following function reads a directory into an Array?
- (a) scandir() (b) readdir()  
(c) scandirectory() (d) readdirectory()
6. fopen() requires \_\_\_\_\_ arguments.
- (a) 0 (b) 1  
(c) 2 (d) 3

7. Which MySQL statement is used to select data from a database?
- (a) extract (b) open  
(c) select (d) get
8. Which is used to combine two or more result sets into a single set without duplicates?
- (a) UNION (b) JOIN  
(c) UNION ALL (d) JOIN ALL
9. Which of the following function returns the current date and time in MySQL?
- (a) now() (b) DATE()  
(c) TIME() (d) TIMESTAMP()
10. \_\_\_\_\_ is the most popular open source SQL database management system.
- (a) MySQL (b) MS Access  
(c) MS SQL (d) Oracle

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) List the features of PHP.

Or

(b) Compare break and continue.

12. (a) Create and modify an array.

Or

(b) Create a simple application using PHP.

13. (a) Compare fgets, fgetc and fseek.

Or

(b) How is a file read into an array? How is a file locked?

14. (a) Mention the pre-requisites for MySQL connection.

Or

(b) Write a note on aggregate function.

15. (a) Write the usage of MySQL commands in PHP.

Or

(b) Write a note on validating user input.

**PART C == (5 × 8 = 40 marks)**

Answer ALL questions, choosing either (a) or (b)

Each answer should not exceed 600 words.

16. (a) Explain switch statement with an example.

Or

(b) Explain for loop with an example.

17. (a) List any four array functions with a description.

Or

(b) Explain session cookies.

18. (a) Describe the file handling operations.

Or

(b) Give an account of reading and writing binary files.

19. (a) Give an account of MySQL data types.

Or

(b) Briefly explain about joining tables.

20. (a) Explain about handling error.

Or

(b) Write queries :

(i) To find rows between two dates or timestamps

(ii) To find rows created within the last week.

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05/06/23

Reg. No. : FIN

(6 pages)

Code No. : 10486 E Sub. Code : CSCA 41

B.C.A. (CBCS) DEGREE EXAMINATION,  
APRIL 2023

Fourth Semester

Computer Application — Skill Based Subject

MICROPROCESSOR

(For those who joined in July 2021 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. A set of instructions written for the microprocessor to perform a task is called a———
  - (a) hardware
  - (b) program
  - (c) software
  - (d) None

2. Bit is an abbreviation for the term ———
  - (a) binary
  - (b) decimal
  - (c) binary digit
  - (d) Both (a) and(b)
3. Counters and time delays can be designed using ———
  - (a) Hardware
  - (b) Software
  - (c) Microprocessor
  - (d) All the above
4. Each instruction of the 8085 microprocessor can be divided into few basic operations called ———
  - (a) write cycle
  - (b) Machine cycle
  - (c) control cycle
  - (d) None of these
5. Choose the Arithmetic instruction from the following
  - (a) ADD R
  - (b) MUI R
  - (c) ANA R
  - (d) XRA R

6. Logic operation rotates has now many instructions?

- (a) Four (b) Two  
(c) Three (d) Six

7. Counters and time delays can be designed using

- (a) Hardware  
(b) Software  
(c) Microprocessor  
(d) All the above

8. A counter design generally includes a \_\_\_\_\_ loop.

- (a) Delay (b) For  
(c) While (d) Down while

9. Write binary equivalent for 7210.

- (a) 0111 0010  
(b) 0111 0111  
(c) 0111 0010  
(d) 1010 1001

10. \_\_\_\_\_ places the stack pointer content in HL.

- (a) SBB (b) DAI  
(c) DAD (d) LXI

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Define High level language. Write short notes on it.

Or

(b) Give the model of assembly language program.

12. (a) What are I/O operations?

Or

(b) Discuss the following : (i) ROM (ii) Flash memory.

13. (a) Write short notes on addressing modes.

Or

(b) Write short notes on 16 bit data transfer to Register pairs (LXI).

14. (a) Discuss Time Delay using register.

Or

(b) Write about generating pulse waveforms.



15. (a) Write short notes on subtraction with carry with examples.

Or

- (b) What is BCD addition? Discuss it.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Explain about Microprocessor Architecture with algorithm.

Or

- (b) Write assembly language program to subtract two numbers.

17. (a) Explain about microprocessor-initiated operations and 8085 bus organization with diagrams.

Or

- (b) How does an 8085 based single board microcomputer work?

18. (a) What are Branch operations in 8085? Discuss it.

Or

- (b) Explain about arithmetic operation related to memory.

19. (a) Define stack. Write its instructions.

Or

- (b) How subroutine and its instructions working in Assembly program.

20. (a) Explain about BCD-to-Seven segment LED code conversion.

Or

- (b) Define ASCII. How to convert ASCII number to binary.

(6 pages)

Reg. No. : .....

Code No. : 10261 E Sub. Code : SECA 6 C/  
AECA 63

B.A. (CBCS) DEGREE EXAMINATION, APRIL 2023.

Sixth Semester

Computer Application

Major Elective — MOBILE COMMUNICATION

(For those who joined in July 2017-2020)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Name the forum defines a framework for the various standards and specifications needed for context / location aware applications.
- (a) API (b) PAM  
(c) DECT (d) PKCS

2. \_\_\_\_\_ can be defined as a computing environment of physical mobility.
- (a) Mobile Communication  
(b) Mobile Computing  
(c) Wireless Communication  
(d) Wireless Computing.
3. \_\_\_\_\_ is a measure to check the output of the demodulator in the receiver.
- (a) Word error indicator  
(b) Quality indicator  
(c) Received signal strength indicator  
(d) None
4. Every mobile equipment in the world has a unique identifier. This identifier is called
- (a) IMEI (b) IMSI  
(c) MCC (d) MNC
5. \_\_\_\_\_ uses shared mobile data service.
- (a) CDPD (b) GMSK  
(c) FDMA (d) GPRS

6. \_\_\_\_\_ satellites are used for cellular mobile communications.
- (a) GEO (b) CEO  
(c) LEO (d) MEO
7. When the mobile unit is near the base station the signal strength will be quite high due to less
- (a) Distraction (b) Allenuation  
(c) Cracker (d) Threater
8. An algorithm to generate cipher key which is dynamic in nature for every cell originated by a particular user.
- (a) A1 (b) A3  
(c) A5 (d) A8
9. Bluetooth technology allows users to make \_\_\_\_\_ wireless connections between devices.
- (a) fixed (b) dynamic  
(c) flexible (d) Ad-hoc
10. The frequency of broadband WLL is around
- (a) 28KHz (b) 28MHz  
(c) 28Hz (d) 28NHz

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Write the properties of wireless medium.
- Or
- (b) Discuss about HLR.
12. (a) Discuss the generation of wireless networks.
- Or
- (b) Write the types of cell splitting.
13. (a) Discuss about Global User Number.
- Or
- (b) Write about shared mobile data.
14. (a) Write about wireless threads.
- Or
- (b) Discuss about fading.

15. (a) Write the advantages of micro cellular.

Or

(b) What is 4G Mobile system converge? Discuss.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Explain about EIR with its diagram.

Or

(b) Write the need of cellular mobile communication with architecture.

17. (a) Enumerate about GSM with its architecture.

Or

(b) What are the hand off techniques? Discuss it.

18. (a) What is CDPD? Discuss it.

Or

(b) Write the types of Satellite classification. Discuss it.

19. (a) What is SINAD? Explain it.

Or

(b) How Mobile IP working with the communication devices?

20. (a) What is Adhoc Network? Discuss it.

Or

(b) Explain the types of intelligent cells.

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(6 pages)

Reg. No. : .....

Code No. : 10236 E Sub. Code : SMCA 41/  
AMCA 41

B.C.A. (CBCS) DEGREE EXAMINATION, APRIL 2023.

Fourth Semester

Computer Application – Core

VISUAL BASIC

(For those who joined in July 2017 – 2020 only)

Time : Three hours

Maximum : 75 marks

SECTION A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. In Visual BASIC project, forms are stored with an extension \_\_\_\_\_  
(a) .form (b) .frm  
(c) .vbform (d) .vbprfm
2. Visual BASIC is a tool that allows you to develop an application in  
(a) Real time (b) late time  
(c) GUI environment (d) CUI environment

7. \_\_\_\_\_ is used to link or embed objects in VB Projects from other Windows applications  
(a) OLE (b) LOE  
(c) LEO (d) LLO
8. \_\_\_\_\_ control displays data that is calculated during runtime, using built-in functions as the report is generated  
(a) Caption  
(b) Connection  
(c) Function  
(d) Date
9. In OLE DB, action that an object can perform is called as \_\_\_\_\_  
(a) abstraction  
(b) encapsulation  
(c) method  
(d) collection
10. VB provides \_\_\_\_\_ native toolbox controls for working with the file system.  
(a) Four (b) three  
(c) two (d) seven

3. MDI stands for \_\_\_\_\_  
(a) Multiple Design Interface  
(b) Multiple Document Interface  
(c) Menu Design Interface  
(d) Manipulated Database Interface
4. A \_\_\_\_\_ in Visual BASIC is used to create applications that present information in rows and columns  
(a) MSGridLine  
(b) MSLineGrid  
(c) MSGraphGrid  
(d) MSFlexGrid
5. \_\_\_\_\_ objects enable you to manipulate the structure of your database and the data it contains from Visual Basic  
(a) DDE (b) ADO  
(c) AOD (d) DOD
6. The Data control implements data access using  
(a) Microsoft Jet Engine  
(b) ODBC  
(c) Open Engine  
(d) Open Excel

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).  
Each answer should not exceed 250 words.

11. (a) Write about the data types in Visual BASIC.  
Or  
(b) Explain the concept of control arrays.
12. (a) How is an MDI form created?  
Or  
(b) Write about the message box in Visual BASIC.
13. (a) Discuss use of DAO object.  
Or  
(b) Mention the ways of accessing databases in Visual BASIC.
14. (a) What is the use of data report? Explain with example?  
Or  
(b) How will you embed Microsoft PowerPoint using OLE?

15. (a) Write a note on files in Visual BASIC.

Or

(b) Discuss OLE DB.

SECTION C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b)  
Each answer should not exceed 600 words.

16. (a) Write a visual BASIC program to display Fibonacci series. Draw the form and controls used.

Or

(b) Write a detailed note on arrays in Visual BASIC.

17. (a) Using Flex Grid create multiplication table.

Or

(b) Explain Mouse events.

18. (a) How is data accessed using RDO? Discuss.

Or

(b) Describe ADO objects.

19. (a) Write steps to create an inventory report

Or

(b) Explain OLE container controls.

20. (a) How do you work with built-in ActiveX controls?

Or

(b) Discuss file system controls.

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Reg. No. : .....

Code No. : 10239 E Sub. Code : SMCA 51/  
AMCA 51

B.C.A. (CBCS) DEGREE EXAMINATION, APRIL 2023.

Fifth Semester

Computer Application - Core

SOFTWARE ENGINEERING

(For those who joined in July 2017 – 2020 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions, Choose the correct answer:

1. \_\_\_\_\_ is the process of creating a representation of the domain on the software.  
(a) modeling (b) design  
(c) programming (d) quality assurance
2. An \_\_\_\_\_ is a chunk of structural data in a running software system.  
(a) class (b) object  
(c) module (d) methods

7. \_\_\_\_\_ is the design of computational mechanism.  
(a) algorithm design (b) class design  
(c) protocol design (d) architecture design
8. In UML \_\_\_\_\_ is a collection of modeling elements that are grouped together because they are logically related.  
(a) subsystem. (b) packages  
(c) element (d) data
9. An effective and efficient testing strategy is often called \_\_\_\_\_ strategy  
(a) black-box (b) white-box  
(c) high-yield (d) none
10. Which model form the foundation of many software development methodologies in use today.  
(a) spiral model  
(b) waterfall model  
(c) evolutionary model  
(d) concurrent engineering model

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3. \_\_\_\_\_ measures the amount of time that a server is running and available to respond to users  
(a) availability  
(b) reliability  
(c) recovers  
(d) throughput
4. \_\_\_\_\_ describes the services provided to the user and to other system.  
(a) background information  
(b) problem  
(c) functional requirements  
(d) non-functional requirements
5. What is used to show how classes are related to in general?  
(a) association (b) methods  
(c) objects (d) module
6. Which diagram is used to model the dynamic aspects of a software system.  
(a) interaction (b) state  
(c) activity (d) none

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PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).  
Each answer should not exceed 250 words.

11. (a) What are the measures of software quality? Discuss.  

Or

(b) Explain the concepts that define object orientation.
12. (a) Write a short note on Domain Analysis.  

Or

(b) Explain the risk factor in domain and requirement analysis.
13. (a) Write the essentials of UML class diagrams.  

Or

(b) Explain Interaction Diagram.
14. (a) Explain Top down and Bottom up design.  

Or

(b) Write the importance of developing Architectural Modal.

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[P.T.O.]

15. (a) Mention the defects in Numerical Algorithm.

Or

(b) What are the skills needed for building Software Engineering teams?

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b)  
Each answer should not exceed 600 words.

16. (a) What are the activities common to software projects? Discuss about them.

Or

(b) Illustrate classes and objects with examples.

17. (a) Discuss the problem and the cope in detail.

Or

(b) Explain the various types of requirement in detail.

18. (a) Explain the Association and Multiplicity with examples.

Or

(b) Explain briefly about activity diagrams. Give examples.

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19. (a) Write about the techniques for making good design decisions.

Or

(b) List out the Architectural pattern.

20. (a) What is effective and efficient testing? Explain in detail.

Or

(b) Explain the software process model in detail.

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Reg. No. : .....

Code No. : 10240 E Sub. Code : SMCA 52/  
AMCA 52

B.C.A. (CBCS) DEGREE EXAMINATION,  
APRIL 2023.

Fifth Semester

Computer Application — Core

WEB TECHNOLOGY

(For those who joined in July 2017-2020)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Which one of the following is used for creating web pages?
- (a) TCP (b) www  
(c) FTP (d) HTML

7. XML uses the features of \_\_\_\_\_
- (a) SGML (b) XHTML  
(c) VML (d) HTML
8. Which of the following is correct in XML?
- (a) The internal DTD subset is read before external DTD  
(b) The external DTD subset is read before internal DTD  
(c) There is no external DTD  
(d) There is no Internal DTD
9. Common Gateway Interface is used to \_\_\_\_\_
- (a) generate executable files from web content by web server  
(b) generate web pages  
(c) stream videos  
(d) stream audios
10. What is extension of Common Gateway Interface Script?
- (a) .cg (b) .cgi  
(c) .cgs (d) .cls

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2. TCP/IP protocol suite consists of \_\_\_\_\_ layers.
- (a) 5 (b) 7  
(c) 4 (d) 8
3. How to create an ordered list in HTML?
- (a) <ul> (b) <ol>  
(c) <olist> (d) <list>
4. What is the effect of the <b> tag?
- (a) It converts the text within it to bold font  
(b) It is used to write black-colored font.  
(c) It is used to change the border  
(d) To change the base
5. \_\_\_\_\_ is the Microsoft implementation of JavaScript for IE.
- (a) JScript (b) JAVA Script  
(c) VB script (d) JDBC
6. In Java Script \_\_\_\_\_ method is used to find the number of elements in an Array object.
- (a) Length() (b) element()  
(c) count() (d) number()

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PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Write a brief note on Internet and its features.  
Or  
(b) Write brief note on HTTP.
12. (a) What is HTML? Write about HTML elements.  
Or  
(b) Write about the various tags used in HTML tables.
13. (a) Write about the variables and the rules for using it in JavaScript.  
Or  
(b) Describe about the do-while and for loop control structures used in Javascript.
14. (a) Write notes on XML and its characteristics.  
Or  
(b) Write about XML DTD, and its use.

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[P.T.O.]

15. (a) Explain about CGI Environment Variables set in Server.

Or

- (b) Tabulate the differences between applets and Servlets.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) What are the important stages web design and development? Explain.

Or

- (b) Explain in detail about MIME and its features.

17. (a) Describe about HTML forms and its important attributes.

Or

- (b) Describe HTML frames and its features.

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18. (a) Explain the various features available in JavaScript.

Or

- (b) Discuss in brief about creating an object using Javascript.

19. (a) Explain in detail XML elements and attributes.

Or

- (b) Describe in detail about XML Schema.

20. (a) Describe in detail about Common Gateway Interface, its features and advantages.

Or

- (b) Describe in detail the lifecycle of a Servlet.

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Code No. : 10242 E Sub. Code : SMCA 61/  
AMCA 61

B.C.A. (CBCS) DEGREE EXAMINATION, APRIL 2023.

Sixth Semester

Computer Application – Core

OPERATING SYSTEMS

(For those who joined in July 2017-2020)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. WAN stands for \_\_\_\_\_  
(a) Wifi Area Network (b) Wide Area Network  
(c) Won Area Network (d) None of these
2. The most common network protocol is \_\_\_\_\_  
(a) FTP (b) HTTP  
(c) TCP/IP (d) SMTP

3. RMI stands for \_\_\_\_\_ method Invocation.  
(a) Real (b) Rear  
(c) Remote (d) ROM
4. The \_\_\_\_\_ producer-customer problem assumes a fixed buffer size.  
(a) unbounded-buffer (b) static-buffer  
(c) bounded-buffer (d) constant
5. The conditions of policy must be present for a deadlock.  
(a) mutual exclusion (b) no preemption  
(c) hold and wait (d) all
6. A schedule where each transaction is executed atomically is called a \_\_\_\_\_.  
(a) serial schedule (b) serializing  
(c) nonserial schedule (d) scheduling

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25/05/23 AN

7. \_\_\_\_\_ uses demand loading of process components to give the illusion of a large memory.  
(a) RAM (b) Virtual memory  
(c) HDD (d) All the above
8. Segmentation is a memory management scheme that supports the \_\_\_\_\_ of memory.  
(a) physical view (b) user view  
(c) combined view (d) conceptual view
9. The creation of a file system in a magnetic disc is \_\_\_\_\_.  
(a) low level formatting (b) physical formatting  
(c) logical formatting (d) all the above
10. Expansion of UFD is \_\_\_\_\_.  
(a) Unique File Directory  
(b) User File Directory  
(c) User Format Dictionary  
(d) User Filter Directory

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).  
Each answer should not exceed 250 words.

11. (a) What is real-time system? Describe the advantages of real-time systems.  
Or  
(b) Write about Handheld system.
12. (a) Explain the operations on processes.  
Or  
(b) Write and explain the CPU scheduling FCFS algorithm.
13. (a) What are the methods for handling deadlocks?  
Or  
(b) Discuss binary semaphore in detail.
14. (a) Discuss about segmentation with paging.  
Or  
(b) Explain about LRU page replacement algorithm.
15. (a) Explain file concepts in detail.  
Or  
(b) Describe swap space management.

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PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b)  
Each answer should not exceed 600 words.

16. (a) Describe multiprocessor and distributed systems with their advantages and disadvantages.

Or

- (b) Explain about mainframe systems and desktop systems.

17. (a) What is process? Explain the basic concepts and the importance of inter processes communication.

Or

- (b) Explain about classical Problems of synchronization.

18. (a) Explain about deadlock prevention and avoidance.

Or

- (b) How to detect and recover from a deadlock?

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19. (a) With a diagram, explain the concept of inverted page table.

Or

- (b) Write about paging and segmentation.

20. (a) Explain the following file operation  
(i) creating a file (ii) writing a file (iii) reading a file (iv) repositioning within a file (v) deleting a file (vi) truncating a file.

Or

- (b) Explain about RAID.

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B.C.A. (CBCS) DEGREE EXAMINATION,  
APRIL 2023.

Sixth Semester

Computer Application — Core

## COMPUTER NETWORKS

(For those who joined in July 2017-2020)

Time : Three hours

Maximum : 75 marks

## PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. The reliable connection oriented protocol is \_\_\_\_\_.  
(a) TCP (b) HTTP  
(c) UDP (d) SNTP
  
7. The change in their routing decisions to reflect change in their topology  
(a) Adoptive algorithm  
(b) Optimality principle  
(c) Routing algorithm  
(d) Non adoptive
  
8. Which of the following are transport layer protocols used in networking?  
(a) TCP and FTP  
(b) UDP and HTTP  
(c) TCP and UDP  
(d) HTTP and FTP
  
9. A \_\_\_\_\_ is a TCP name for a transport service access point.  
(a) port (b) pipe  
(c) node (d) protocol
  
10. The keys used in cryptography are \_\_\_\_\_.  
(a) secret key (b) private key  
(c) public key (d) all of the above

2. The standard for wireless LAN is \_\_\_\_\_.  
(a) 802.1 (b) 802.2  
(c) 802.3 (d) 802.11
  
3. Which of the following is not an unguided transmission media?  
(a) Magnetic media (b) Infrared wave  
(c) Micro wave (d) Radio transmission
  
4. The number of oscillations per second of a wave is called \_\_\_\_\_.  
(a) Wavelength (b) Frequency  
(c) light (d) none
  
5. The change made in one bit in the entire data sequence is known as \_\_\_\_\_.  
(a) Burst error (b) Multiple bit error  
(c) Single bit error (d) None
  
6. The strategy for handling errors when frames are pipelined is called \_\_\_\_\_.  
(a) selective repeat (b) go back n  
(c) pipelining (d) none

## PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Write a short note on Wireless Networks.  
Or  
(b) Compare OSI reference model and TCP/IP Reference model.
  
12. (a) Write a short note on Geo Stationary Satellite.  
Or  
(b) Explain briefly about Low - earth orbit satellite.
  
13. (a) Write a short note on Gigabit Ethernet.  
Or  
(b) Write a short note on Bluetooth? Mention any two applications.
  
14. (a) Explain Distance vector routine in detail.  
Or  
(b) Write a short note on congestion Control.

15. (a) Explain Transposition cipher method with example.

Or

- (b) Write the basic functions of E-mail in detail.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Explain service Primitives in detail.

Or

- (b) Write the difference between connectionless communication and connection oriented communication.

17. (a) Explain various Guided Transmission media in detail.

Or

- (b) Write a brief note on Electro Magnetic Spectrum.

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18. (a) Write briefly about A Simplex stop-and wait protocol.

Or

- (b) Explain one-bit sliding window protocol in detail.

19. (a) Explain the elements of transport protocol in detail.

Or

- (b) Explain TCP in detail.

20. (a) Explain Caesar cipher with an example.

Or

- (b) Explain RSA algorithm in detail.
- 

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B.C.A. (CBCS) DEGREE EXAMINATION,  
APRIL 2023.

Sixth Semester

Computer Applications – Core

COMPUTER GRAPHICS

(For those who joined in July 2017-2020)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Which one of the following is the primarily used output device?
- (a) Video monitor
  - (b) Scanner
  - (c) Speaker
  - (d) Printer

6. Which of the following transformation is used for altering the objects size?
- (a) Translation
  - (b) Scaling
  - (c) Rotation
  - (d) None of the above
7. Clipping algorithm are
- (a) Two or three dimensional
  - (b) Two dimensional
  - (c) Three dimensional
  - (d) None of these
8. Sutherland Hodgemon algorithm is used for:
- (a) Line clipping
  - (b) Point clipping
  - (c) Polygon dipping
  - (d) Hybrid clipping
9. Z-buffer algorithm is used for:
- (a) Frame buffer removal
  - (b) Hidden line removal
  - (c) Rendering
  - (d) Animation

2. \_\_\_\_\_ acts as anode in CRT.
- (a) The phosphorous coating
  - (b) The glass panel
  - (c) The deflectors
  - (d) None of these
3. Which of the algorithm is used to color a pixel if it is not colored and leaves it if it is already filled?
- (a) Boundary fill algorithm
  - (b) Scan line polygon fill algorithm
  - (c) Flood fill algorithm
  - (d) All of the above
4. Bresanham circle algorithm uses the approach of
- (a) Point
  - (b) Line
  - (c) Square
  - (d) Midpoint
5. Which one is the rigid body transformation that moves object without deformation?
- (a) Translation
  - (b) Scaling
  - (c) Rotation
  - (d) Shearing

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10. Which surface algorithm is based on perspective depth?
- (a) Depth comparison
  - (b) Z-buffer algorithm
  - (c) Subdivision method
  - (d) Back-face removal

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Explain Working principle of Plasma Panel Display.
- Or
- (b) Explain Graphical User Interface.
12. (a) Explain odd-even rules with example.
- Or
- (b) Briefly explain about winding number method.
13. (a) Explain reflection in 2D.
- Or
- (b) Explain transformation in homogenous co-ordinate system.

14. (a) Write short notes on viewing and clipping.

Or

(b) Explain the concepts of Parametric Clipping.

15. (a) What is the difference between object space and image space methods?

Or

(b) Discuss the limitations of Depth Buffer.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Explain with a neat diagram the working principle of CRT and color Monitors.

Or

(b) Discuss the Raster Scan and Random Scan Display devices.

17. (a) Discuss in detail Bresenham's Circle-Drawing Algorithm.

Or

(b) How to perform flood fill using the algorithm? Explain.

18. (a) Discuss about two dimensional rotation and scaling.

Or

(b) Explain the 3-D Rotation transformation in detail.

19. (a) Explain midpoint Subdivision algorithm.

Or

(b) List different polygon clipping algorithms and explain any one of them.

20. (a) Explain briefly about Back Face Removal Algorithm.

Or

(b) Explain in detail about types of hidden surface algorithms.



(6 pages)

Reg. No. : .....

Code No.: 6066

Sub. Code: ZCAE 23

M.C.A. (CBCS) DEGREE EXAMINATION,  
APRIL 2023.

Second Semester

Computer Application – Core

Elective – SOFT COMPUTING

(For those who joined in July 2021 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Which of the following is associated with fuzzy logic?  
(a) Crisp set logic      (b) Many-valued logic  
(c) Two-valued logic    (d) Binary set logic
2. How many types of random variables are there in Fuzzy logic?  
(a) 2                      (b) 4  
(c) 1                      (d) 3

3. What is the name of the operator in fuzzy set theory, which is found to be linguistic in nature?  
(a) Lingual Variable    (b) Fuzzy Variable  
(c) Hedges              (d) None of the above
4. Uncertainty can be represented by \_\_\_\_\_.  
(a) Entropy              (b) Fuzzy logic  
(c) Probability         (d) All of the above
5. A perceptron can be defined as \_\_\_\_\_.  
(a) A double layer auto-associative neural network  
(b) A neural network with feedback  
(c) An auto-associative neural network  
(d) A single layer feed-forward neural network with pre-processing
6. Back propagation can be defined as \_\_\_\_\_.  
(a) It is another name given to the curvy function in the perceptron.  
(b) It is the transmission of errors back through the network to adjust the inputs.  
(c) It is the transmission of error back through the network to allow weights to be adjusted so that the network can learn.  
(d) None of the above

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7. Based on \_\_\_\_\_ membership function can be used to solve empirical problems.  
(a) Knowledge          (b) Learning  
(c) Examples            (d) Experience
8. A neuro software can be defined as:  
(a) A powerful and easy neural network  
(b) A software that is used to analyze neurons  
(c) Software utilized by a neurosurgeon  
(d) A software aimed to assist experts in the real world
9. What is involved in inductive learning?  
(a) Inconsistent Hypothesis  
(b) Consistent Hypothesis  
(c) Estimated Hypothesis  
(d) Irregular Hypothesis
10. Automated vehicle is an application of \_\_\_\_\_.  
(a) Unsupervised learning  
(b) Supervised learning  
(c) Reinforcement learning  
(d) Active learning

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Code No. : 6066

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).  
Each answer should not exceed 250 words.

11. (a) Discuss the basic concepts of neural networks.  
Or  
(b) Write the principles of Hebb network.
12. (a) What is the role of Hopfield networks? Explain it.  
Or  
(b) Describe about the adaptive resonance theory network.
13. (a) Differentiate classical sets and fuzzy sets.  
Or  
(b) What are the features of membership functions?
14. (a) Define extension principle. Discuss it.  
Or  
(b) Write short notes on control system design.

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Code No. : 6066

[P.T.O.]

15. (a) Give a brief note on basic operators in Genetic Algorithms.

Or

- (b) List out the applications of genetic algorithms.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b)  
Each answer should not exceed 600 words.

16. (a) Briefly explain McCulloch-Pitts neuron with neat diagram.

Or

- (b) State the various applications of neural network.

17. (a) Elaborate on auto associative memory network with example.

Or

- (b) Discuss fixed weight competitive nets.

18. (a) Explain Cartesian product of a relation with example.

Or

- (b) Describe about defuzzification methods.

19. (a) Compare truth values and tables in fuzzy logic.

Or

- (b) Write the architecture of FLC system in detail.

20. (a) Give a brief note on basic terminologies in Genetic Algorithms.

Or

- (b) Explain in detail about the classification of genetic algorithms.

Reg. No. : .....

Code No. : 6060

Sub. Code : ZCAM 21

M.C.A. (CBCS) DEGREE EXAMINATION,  
APRIL 2023.

Second Semester

Computer Application – Core

FINANCIAL AND MANAGEMENT ACCOUNTING

(For those who joined in July 2021 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Financial Accounting provides accounting information to the \_\_\_\_\_ though the information is useful for Internal Purposes also.
  - (a) External users
  - (b) Internal users
  - (c) Company
  - (d) Competitors

2. The account that records expenses, gains and losses is
- (a) Personal Account (b) Real Account  
(c) Nominal Account (d) None of the above
3. The following is a statement of revenues and expenses for a specific period of time.
- (a) Trading Account  
(b) Trial Balance  
(c) Profit and loss statements  
(d) Balance sheet
4. Balance sheets are prepared
- (a) Daily (b) Weekly  
(c) Monthly (d) Annually
5. A higher inventory ratio indicates
- (a) Better inventory management  
(b) Quick turnover  
(c) Both (a) and (b)  
(d) None of the above

6. Uses of funds include a(an)
- (a) Decrease in cash  
(b) Increase in fixed assets  
(c) Increase in any liability  
(d) Tax Refund
7. What is BEP in Marginal Costing?
- (a) Bank Entry Pass  
(b) Break Entity Point  
(c) Break Entity Profit  
(d) Break Even Point
8. The P/V ratio will be equal to
- (a) The profits by sales ratio  
(b) The profits by the contribution ratio  
(c) The profits by the sales and variable cost  
(d) The contribution by the sales ratio
9. The basic standard with in the standard costing process is established for \_\_\_\_\_.
- (a) A long period  
(b) The current period  
(c) An indefinite period  
(d) The short period

10. Sales budget is a \_\_\_\_\_.

- (a) Functional budget
- (b) Financial budget
- (c) Master budget
- (d) None of the above

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

11. (a) Describe the advantages of Journal.

Or

(b) Prepare a sale book from the following transactions:

| 1982   |                      | Rs. |
|--------|----------------------|-----|
| Jan 1  | Sold goods to Sen    | 400 |
| Jan 3  | Sold goods to Ramesh | 250 |
| Jan 11 | Sold goods to Roy    | 800 |
| Jan 13 | Sold goods to Ram    | 300 |

12. (a) Explain the objectives of preparing a Trial Balance.

Or

(b) From the Information given below prepare trading account.

|                  | Rs.      |
|------------------|----------|
| Opening stock    | 1,00,000 |
| Purchases        | 1,50,000 |
| Purchase Returns | 25,000   |
| Direct expenses  | 10,000   |
| Carriage inwards | 5,000    |
| Sales            | 4,00,000 |
| Closing stock    | 50,000   |

13. (a) Bring out the limitations of Ratio Analysis.

Or

(b) Calculate funds from operation

|                                | 31/3/93  | 31/3/94  |
|--------------------------------|----------|----------|
|                                | Rs.      | Rs.      |
| Balance of profit and loss a/c | 1,00,000 | 1,50,000 |

| Additional Information                           | Rs.    |
|--------------------------------------------------|--------|
| (i) Depreciation charged on assets               | 10,000 |
| (ii) Preliminary expenses written off            | 5,000  |
| (iii) Amount transferred to General Reserve      | 15,000 |
| (iv) A machine of book value Rs. 60,000 sold for | 65,000 |
| (v) Interim dividend paid                        | 10,000 |

14. (a) Explain the scope of costing.

Or

(b) From the following data calculate

- (i) P/V ratio
- (ii) Variable cost
- (iii) Profit

|                  | Rs.    |
|------------------|--------|
| Sales            | 80,000 |
| Fixed expenses   | 15,000 |
| Break even point | 50,000 |

15. (a) Write a short notes on

- (i) Material mix variance.
- (ii) Material yield variance.

Or

(b) With the following data for 60% activity prepare a budget at 80% activity

|                              |                        |
|------------------------------|------------------------|
| Production at 60% capacity - | 600 units              |
| Materials                    | Rs. 100 per unit       |
| Labour                       | Rs. 40 per unit        |
| Direct expenses              | Rs. 10 per unit        |
| Factory expenses             | Rs. 40,000 (40% fixed) |
| Administration expenses      | Rs. 30,000 (60% fixed) |

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PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

16. (a) Explain various Accounting concepts briefly.

Or

(b) Journalise the following transactions.

|       |    |                                        |        |
|-------|----|----------------------------------------|--------|
| 1999  | 1  | Capital paid in to Bank                | 10,000 |
| March |    |                                        |        |
|       | 1  | Paid rent for the month                | 600    |
|       | 2  | Paid cash for office stationary        | 60     |
|       | 3  | Bought goods for cash                  | 4,200  |
|       | 5  | Sold goods for cash                    | 1,500  |
|       | 6  | Bought office furniture from Babu Bros | 1,000  |
|       | 13 | Withdrew cash from bank                | 3,000  |
|       | 18 | Drew cash for personal use             | 6,000  |

17. (a) What are the guidelines to locate errors when trial balance is not tallied?

Or

(b) Prepare trading and profit and loss account from the information given below

|               | Rs.    |                | Rs. |
|---------------|--------|----------------|-----|
| Opening stock | 3,600  | Rent (factory) | 400 |
| Purchases     | 18,260 | Rent (office)  | 500 |

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|                       |        |                       |     |
|-----------------------|--------|-----------------------|-----|
|                       | Rs.    |                       | Rs. |
| Wages                 | 3,620  | Sales returns         | 700 |
| Closing stock         | 4,420  | Purchase returns      | 900 |
| Sales                 | 32,000 | General expenses      | 900 |
| Carriage on purchases | 500    | Discount to customers | 360 |
| Carriage on sales     | 400    | Interest from bank    | 20  |

18. (a) Bring out the advantages and types of Ratio Analysis.

Or

(b) From the following two balance sheets you are required to prepare a statement of Sources and Applications of funds.

Balance sheet

| Liabilities     | 2004            | 2005            | Assets         | 2004            | 2005            |
|-----------------|-----------------|-----------------|----------------|-----------------|-----------------|
|                 | Rs.             | Rs.             |                | Rs.             | Rs.             |
| Share capital   | 40,000          | 45,000          | Cash           | 30,000          | 47,000          |
| Trade creditors | 10,000          | 23,000          | Debtors        | 1,20,000        | 1,15,000        |
| P and L A/c     | 2,30,000        | 2,50,000        | Stock in trade | 80,000          | 90,000          |
|                 |                 |                 | Land           | 50,000          | 66,000          |
|                 | <u>2,80,000</u> | <u>3,18,000</u> |                | <u>2,80,000</u> | <u>3,18,000</u> |

19. (a) Explain the different kinds of Break Even Charts.

Or

(b) (i) Calculate break even point from the following

Sales 1000 units at Rs. 10 each Rs. 10,000

Variable cost – Rs. 6 per unit

Fixed cost – Rs. 8,000.

(ii) If the selling price is reduced to Rs. 9, what is the new break even point?

20. (a) Explain the merits and demerits of standard costing.

Or

(b) The expenses budgeted for production of 10000 units in a Factory are furnished below.

|                               | Per Unit<br>(Rs.) |
|-------------------------------|-------------------|
| Material                      | 70                |
| Labour                        | 25                |
| Variable overheads            | 20                |
| Fixed overhead (Rs. 1,00,000) | 10                |
| Variable expenses (Direct)    | 5                 |
| Selling expenses (10% fixed)  | 13                |

|                                                            | Per Unit<br>(Rs.) |
|------------------------------------------------------------|-------------------|
| Distribution expenses (20% fixed)                          | 7                 |
| Administration expenses (50,000) (Fixed<br>for all levels) | 5                 |
|                                                            | <hr/>             |
| Total cost per unit                                        | 155               |
|                                                            | <hr/>             |

Prepare flexible budget for the production of  
(i) 8,000 units. (ii) 6000 units.



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M.C.A.(CBCS) DEGREE EXAMINATION, APRIL 2023.

Second Semester

Computer Applications – Core

MACHINE LEARNING USING PYTHON

(For those who joined in July 2021 onwards)

Time : 3 hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. The Scikit-learn package depends on \_\_\_\_\_ and \_\_\_\_\_ packages.  
(a) NumPy and Jupyter  
(b) NumPy and SciPy  
(c) DLL  
(d) COM

6. We can find out which features have been selected using.  
(a) reshape ()                      (b) get-support ()  
(c) hstack ()                        (d) All of the above
7. \_\_\_\_\_ is a statistical method of evaluating generalization performance that is more stable and thorough than using a split into a training and a test set  
(a) cross-validation                (b) feature extraction  
(c) smoothing                        (d) k-fold
8. \_\_\_\_\_ is the number of correct predictions by the number of all samples.  
(a) false positive                    (b) accuracy  
(c) false negative                    (d) confusion matrix
9. The evaluation metrics which can be used to evaluate a model while modeling a continuous output variable is \_\_\_\_\_  
(a) AUC-ROC                        (b) Accuracy  
(c) recall                              (d) Mean-Squared-Error
10. The function \_\_\_\_\_ that will create a pipeline for us and automatically name each step based on its class.  
(a) pipeline()                        (b) create\_pipeline()  
(c) make\_pipeline()                (d) MinMaxScalar()

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2. Which of the following is more appropriate to do feature selection?  
(a) Ridge                              (b) Lasso  
(c) Both (a) and (b)                (d) Neither (a) nor (b)
3. PCA is \_\_\_\_\_ method.  
(a) Backward feature selection  
(b) Forward feature selection  
(c) Feature extraction  
(d) Data smoothing
4. In which of the following cases will K-means clustering fail to give good results?  
(a) Data points with outliers  
(b) Data points with different densities  
(c) Data points with non convex shapes  
(d) All
5. \_\_\_\_\_ refers to the process of converting or partitioning continuous attributes, features or variables to discretized or nominal attributes/features.  
(a) binning                            (b) discretization  
(c) trees                                (d) feature selection

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PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).  
Each answer should not exceed 250 words.

11. (a) Recognize any five essential libraries and tools for python. Give examples.  
Or  
(b) Distinguish between overfitting and underfitting. How to avoid overfitting and underfitting?
12. (a) Hypothesize the types and challenges of unsupervised learning  
Or  
(b) Explain Non-Negative Matrix Factorization for feature extraction.
13. (a) Describe one-hot encoding with an example.  
Or  
(b) Infer the process of univariate nonlinear transformations.
14. (a) Discuss how cross validation is carried out in Scikit-learn.  
Or  
(b) Recall the usage of Precision-recall curves and ROC curves.

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15. (a) Elaborate on building pipelines with sample code.

Or

(b) Describe the General Pipeline Interface.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b)  
Each answer should not exceed 600 words.

16. (a) Reframe the classification and regression algorithm with its types in machine learning.

Or

(b) Analyse NaïveBayes supervised machine learning algorithm.

17. (a) Elaborate on principal component analysis for feature extraction.

Or

(b) Establish K-means clustering in unsupervised machine learning.

18. (a) Indicate the three automatic feature selection methods.

Or

(b) How to enhance interactions and polynomial features to enrich feature representation.

19. (a) Interpret Stratified k-Fold Cross-Validation and Other Strategies.

Or

(b) Elaborate on Grid Search with Cross-Validation with the block representation.

20. (a) Propose detailed notes on Grid-Searching preprocessing steps and Model Parameters.

Or

(b) Illustrate Parameter Selection with Preprocessing.

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(6 pages)

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Code No.: 6062

Sub. Code: ZCAM 23

M.C.A.(CBCS) DEGREE EXAMINATION, APRIL 2023.

Second Semester

Computer Application – Core

ADVANCED WEB TECHNOLOGY

(For those who joined in July 2021 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. NET Classes are contained in
  - (a) Namespace
  - (b) CLR
  - (c) Assemblies
  - (d) NET Class Library
2. In VB.NET to resize the array and retain the content of array.
  - (a) Dim My Array (10,10)
  - (b) ReDim My Array (10,10)
  - (c) My Array (10,10)
  - (d) ReDim Preserve My Array (10,10)

3. \_\_\_\_\_ is a web control property to display a text message where the user hovers the mouse above the control.
  - (a) Button
  - (b) Tab Index
  - (c) Tool Tip
  - (d) icon
4. Which technology allows VB.NET to collapse a structure, block structure or a region to a single line.
  - (a) Intelligence
  - (b) Member list
  - (c) Outlining
  - (d) Block completion
5. In a connection string \_\_\_\_\_ represents name of the database.
  - (a) Data Source
  - (b) Initial catalog
  - (c) Catalog Initial
  - (d) Database
6. The first record in a dataset has a position property of
  - (a) Zero
  - (b) Any value defined by the programmer
  - (c) one
  - (d) All the above

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7. Which of the following languages is an XML format that describes the interface to web services, including the data formats?
  - (a) HTML
  - (b) WSDL
  - (c) DHTML
  - (d) XML
8. Which of the following is an object that provides local representation of a remote web service?
  - (a) FTP service
  - (b) Web service proxies
  - (c) Web form
  - (d) HTTP service
9. \_\_\_\_\_ stores a copy of the finally rendered HTML pages or part of pages sent to the client.
  - (a) Output caching
  - (b) Data Caching
  - (c) Object caching
  - (d) Class caching
10. It involves encrypting the channel between the client browser and the web server.
  - (a) Authentication
  - (b) Authorization
  - (c) confidentiality
  - (d) Integrity

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PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).  
Each answer should not exceed 250 words.

11. (a) Compare C# and VB.NET.  
Or  
(b) Write about Scope and Accessibility.
12. (a) Describe Code-Behind with example  
Or  
(b) Describe the tag for the Validator Control
13. (a) Discuss ADO.NET Namespace  
Or  
(b) Describe Creating a Connection and connection String.
14. (a) Describe the web service communication.  
Or  
(b) Write about Proxy Class.
15. (a) Describe Custom Control.  
Or  
(b) Write about Caching.

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[P.T.O.]

PART C — (5× 8= 40 marks)

Answer ALL questions, choosing either (a) or (b)  
Each answer should not exceed 600 words.

16. (a) Explain data types in ASP.NET

Or

- (b) Write a VB.NET Program to implement the property and display a page with text, Image and Link.

17. (a) Explain Global.asax code behind and the Application Events.

Or

- (b) Explain about Calendar Control.

18. (a) Explain ADO.NET Object Model.

Or

- (b) Write a ADO.NET Program to Insert and Update a record into the student database with the column of stu-name, Roll-no, M1,M2,M3, Tot.

19. (a) Explain WSDL Architecture

Or

- (b) Write an ASP.NET Program to implement a simple web service?

20. (a) Explain ASP.NET Security Model.

Or

- (b) Write an ASP.NET Program to create user control and add it to the page?

(6 pages)

Reg. No. : \_\_\_\_\_

Code No. : 6063

Sub. Code : ZCAM 24

M.C.A (CBCS) DEGREE EXAMINATION, APRIL 2023.

Second Semester

Computer Application – Core

ADVANCED DATA BASE MANAGEMENT SYSTEM

(For those who joined in July 2021 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. A Relational Database consists of a collection of  
(a) Table (b) Rows  
(c) Columns (d) All
2. Which Operation returns rows of the input relation that satisfy the predicate?  
(a) Union (b) Natural Join  
(c) Projection (d) Selection

8. \_\_\_\_\_ is a state of a database system having two or more transaction, when each transaction is waiting for a data item that is being locked by some other transaction  
(a) Semaphore  
(b) Deadlock  
(c) Wait state  
(d) Page management system
9. Which of the Join operations do not preserve non matched tuples?  
(a) Left outer join (b) Right outer join  
(c) Inner join (d) Natural join
10. The \_\_\_\_\_ manager manages the execution of those transaction that access data stored in a local site  
(a) Transaction (b) Database design  
(c) Locking Protocol (d) Shrinking Phase

3. The process of designing subgrouping within an entity set is called  
(a) Specialization (b) Serialization  
(c) Parallelization (d) Generalization
4. The primary key of an entity set allows us to distinguish among the various entities of the \_\_\_\_\_  
(a) Set (b) Values  
(c) Database (d) Tables
5. The \_\_\_\_\_ clause is used to list the attributes desired in the result of query  
(a) Where (b) Select  
(c) From (d) Distinct
6. A B<sup>+</sup> tree index is a \_\_\_\_\_  
(a) Secondary index (b) Dense index  
(c) Sparse index (d) Multilevel index
7. Conversion from shared to exclusive modes by \_\_\_\_\_  
(a) Upgrade (b) Insert point  
(c) Starting point (d) Lock point

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).  
Each answer should not exceed 250 words.

11. (a) List out the advantage and disadvantage of DBMS?  
Or  
(b) Write short notes on the following.  
(i) Select Operation (ii) Project Operation
12. (a) Discuss the attribute inheritance in extended E-R feature.  
Or  
(b) Write short notes on domain relational calculus?
13. (a) Draw Transaction state diagram and explain its status.  
Or  
(b) Describe 4NF & 5NF.
14. (a) Describe validation steps for update transaction in snapshot isolation.  
Or  
(b) Write short note on concurrency control.

15. (a) Discuss the Partitioning technique.

Or

(b) Describe distributed data storage.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).  
Each answer should not exceed 600 words.

16. (a) Explain the following with example.

- (i) The Entity-Relationship Model
- (ii) Relational Model

Or

(b) Explain the structure of Relational Database.

17. (a) Explain about Entity Relationship design issues.

Or

(b) Explain Functional dependency & BCNF.

18. (a) What is Serializability? Explain in detail.

Or

(b) Discuss Queries and updates in dynamic hashing.

19. (a) Explain insert and delete operations in timestamp base protocol.

Or

(b) Explain TWO-Phase locking protocol.

20. (a) Explain Server system Architecture.

Or

(b) Illustrate Parallel database architecture with example.

(6 pages)

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M.C.A. (CBCS) DEGREE EXAMINATION,  
NOVEMBER 2023.

Third Semester

Computer Applications – Core

DATA SCIENCE AND ANALYTICS

(For those who joined in July 2021 - 2022)

Time : Third hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL the questions.

Choose the correct answer :

- Which of the following is not a part of the data science process?  
(a) Communication building  
(b) Operationalize  
(c) Model planning  
(d) Discovery

- \_\_\_\_\_ is a programming model designed for processing large volumes of data in parallel by dividing the work into a set of independent tasks.  
(a) Hive (b) MapReduce  
(c) Pig (d) Lucene
- Who created Hadoop?  
(a) Doug cutting (b) JetBrains  
(c) Graydon Hoare (d) Robert Griesemer
- InfoSphere Data Stage has \_\_\_\_\_ levels of Parallelism  
(a) 4 (b) 3  
(c) 1 (d) 2
- InfoSphere \_\_\_\_\_ provides you with the ability to flexibly meet your unique information integration requirements  
(a) Data Server (b) Information Server  
(c) Info Server (d) All of the mentioned
- \_\_\_\_\_ are at the heart of the Streams analytical engine.  
(a) Operators (b) Server  
(c) Client (d) File

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- Data science is the process of diverse set of data through?  
(a) Organizing data  
(b) Processing data  
(c) Analysing data  
(d) All of the above
- A correct way to preprocess the data when performing regression or classification is  
(a) Normalize the data → PCA → normalize PCA output → training  
(b) Normalize the data → PCA → training normalize → PCA output  
(c) PCA → normalize PCA output → training  
(d) Normalize the data → PCA → training
- Which of the following is required by K-means clustering?  
(a) Defined distance metric  
(b) Number of clusters  
(c) Initial guess as to cluster centroids  
(d) All of the mentioned

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- Which of the following genres does Hadoop produce?  
(a) Distributed file system  
(b) JAX-RS  
(c) Java Message Service  
(d) Relational database Management System

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).  
Each answer should not exceed 250 words.

- (a) Define data science. Why we need data science?  
Or  
(b) Reframe the local regression in Data science.
- (a) Write an overview of any two unsupervised learning methods.  
Or  
(b) Originate K-means clustering. Specify some applications.
- (a) Define Bigdata, Specify the characteristics of Bigdata.  
Or  
(b) Discuss the Hadoop different components

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[P.T.O.]



14. (a) How to install Infosphere BigInsights. Mention the components included in BigInsights 1.2.

Or

(b) Articulate the adaptive Mapreduce Infosphere BigInsights.

15. (a) Examine the basics of Infosphere Stream

Or

(b) Discuss the operators of Streams Processing Language.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b)  
Each answer should not exceed 600 words.

16. (a) Intervene the prerequisite probability concepts for Bayes rule.

Or

(b) Formulate the polynomial regression using R.

17. (a) Elucidate on Naïve Bayes classifier.

Or

(b) Show the Kernel density estimation in unsupervised learning

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18. (a) Paraphrase

(i) Importance of Bigdata.

(ii) Bigdata use cases.

Or

(b) Interpret the application development in Hadoop.

19. (a) Analyze administrative tooling benefits in Infosphere BigInsights.

Or

(b) Generalize the Data Discovery and Visualization.

20. (a) Elucidate on industry use cases for InfoSphere Streams

Or

(b) Explain in detail the Infosphere streams tool kits.

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